

## Climate Trends, César E. Chávez National Monument, California

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Historical and projected climate trends for the national monument (data Daly et al. 2008, IPCC 2013; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).

|   | mean | SD              |
|---|------|-----------------|
| <b>Historical (1950-2010)</b>             |      |                 |
| temperature annual average                | 15.7 | 0.5 °C          |
| temperature linear trend                  | 0.3  | N.S. °C/century |
| precipitation annual average              | 280  | 100 mm/y        |
| precipitation linear trend                | 32   | Sig. %/century  |
| <b>Projected (2000-2100)</b>              |      |                 |
| Lowest emissions scenario (IPCC RCP 2.6)  |      |                 |
| temperature annual average trend          | 1.5  | 0.6 °C/century  |
| precipitation annual average trend        | 5    | 14 %/century    |
| Medium emissions scenario (IPCC RCP 4.5)  |      |                 |
| temperature annual average trend          | 2.5  | 0.7 °C/century  |
| precipitation annual average trend        | 2    | 11 %/century    |
| High emissions scenario (IPCC RCP 6.0)    |      |                 |
| temperature annual average trend          | 2.8  | 0.7 °C/century  |
| precipitation annual average trend        | 3    | 17 %/century    |
| Highest emissions scenario (IPCC RCP 8.5) |      |                 |
| temperature annual average trend          | 4    | 0.8 °C/century  |
| precipitation annual average trend        | 4.4  | 19 %/century    |

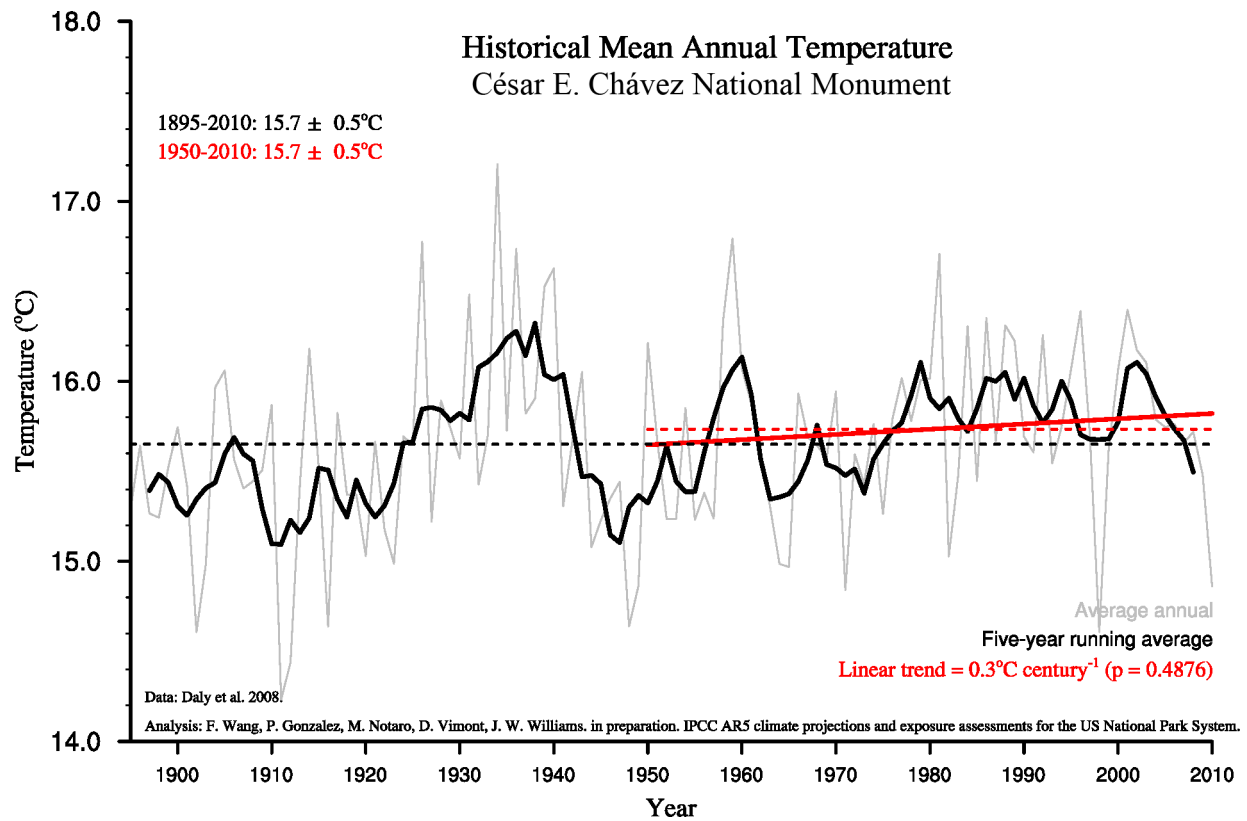
SD = standard deviation; Sig. = statistically significant; N.S. = not statistically significant

## **References**

- Daly, C., M. Halbleib, J.I. Smith, W.P. Gibson, M.K. Doggett, G.H. Taylor, J. Curtis, and P.P. Pasteris. 2008. Physiographically sensitive mapping of climatological temperature and precipitation across the conterminous United States. *International Journal of Climatology* 28: 2031–2064.
- Intergovernmental Panel on Climate Change (IPCC). 2013. *Climate Change 2013: The Physical Science Basis*. Cambridge University Press, Cambridge, UK.

**Figure 1.**

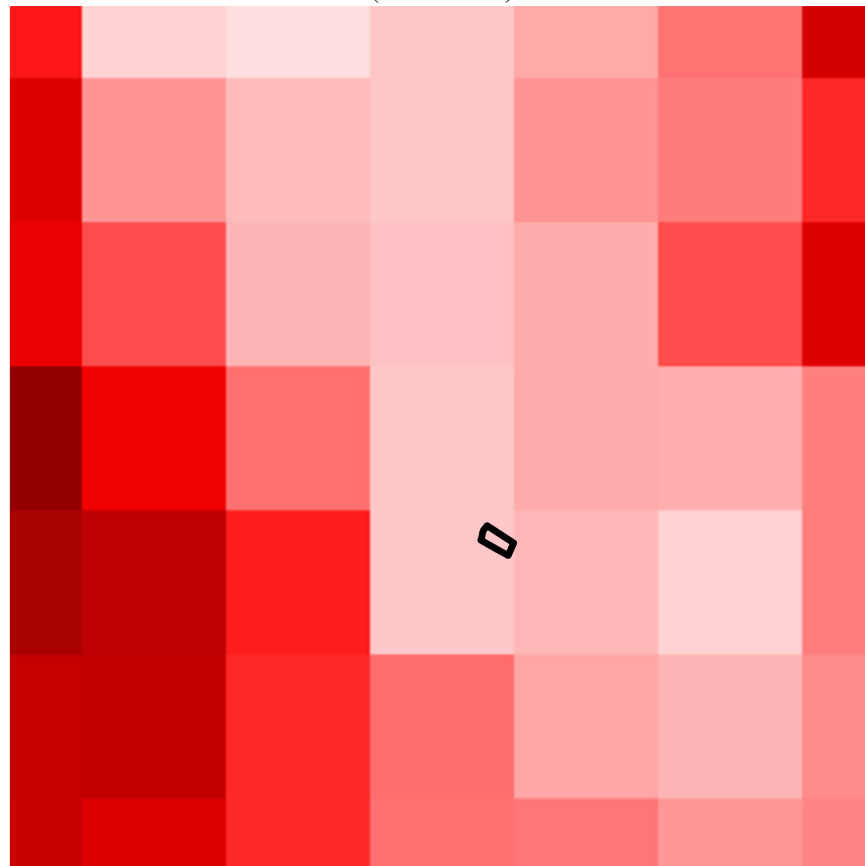
Average annual temperature (1895-2010), César E. Chávez National Monument (data Daly et al. 2008; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).



**Figure 2.**

Average annual temperature (1950-2010), César E. Chávez National Monument and surrounding landscape (data Daly et al. 2008; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).

Linear Trend in Historical Mean Annual Temperature ( $^{\circ}\text{C century}^{-1}$ )  
César E. Chávez National Memorial  
(1950 - 2010)



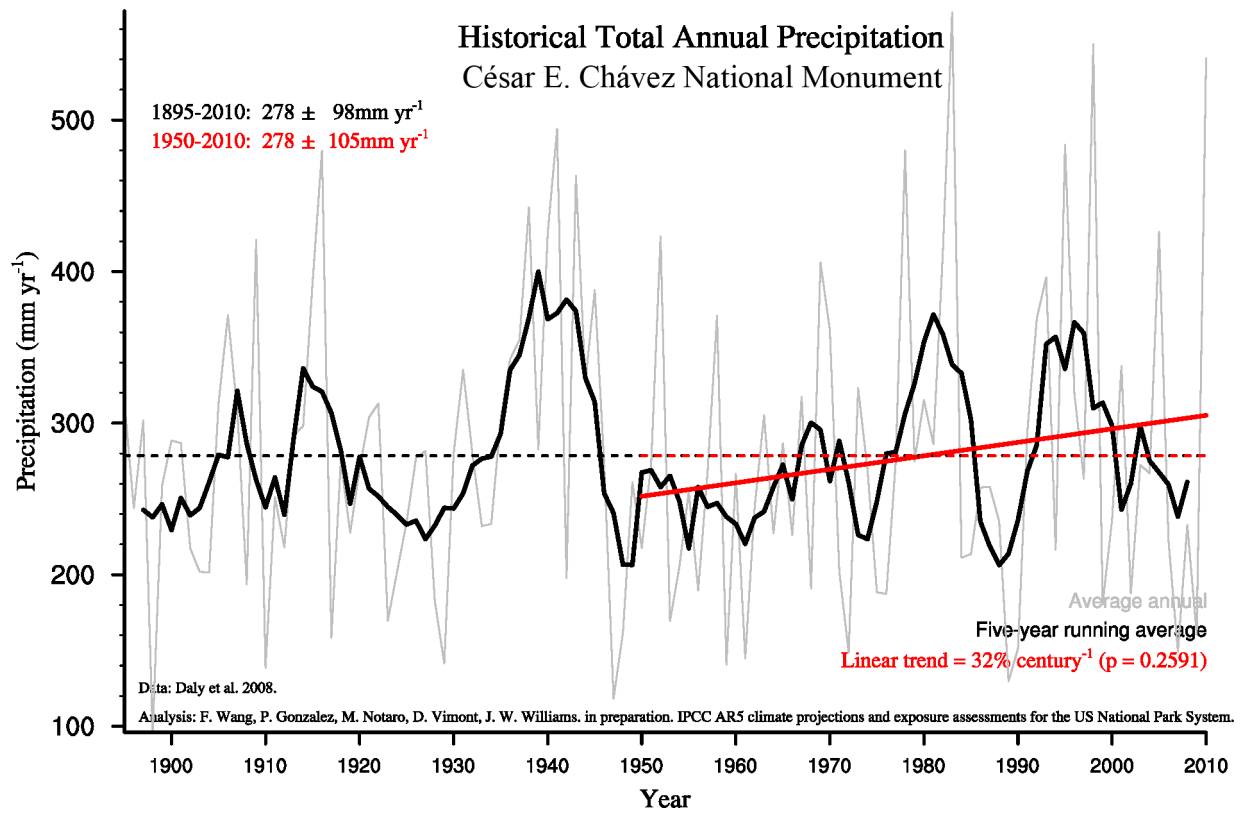
Data: IPCC 2013. Daly et al. 2008. Analysis: F. Wang, P. Gonzalez, M. Notaro, D. Vimont, J. W. Williams.

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**Figure 3.**

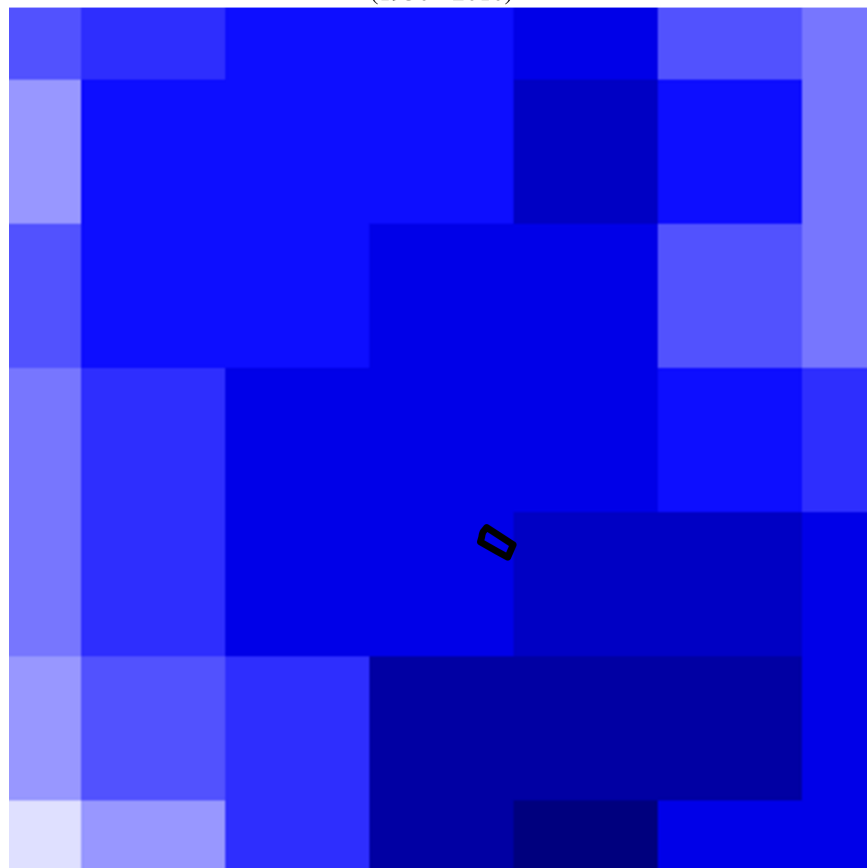
Average annual precipitation (1895-2010), César E. Chávez National Monument (data Daly et al. 2008; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).



**Figure 4.**

Average annual precipitation (1950-2010), César E. Chávez National Monument and surrounding landscape (data Daly et al. 2008; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).

Linear Trend in Historical Total Annual Precipitation (%)  
César E. Chávez National Memorial  
(1950 - 2010)



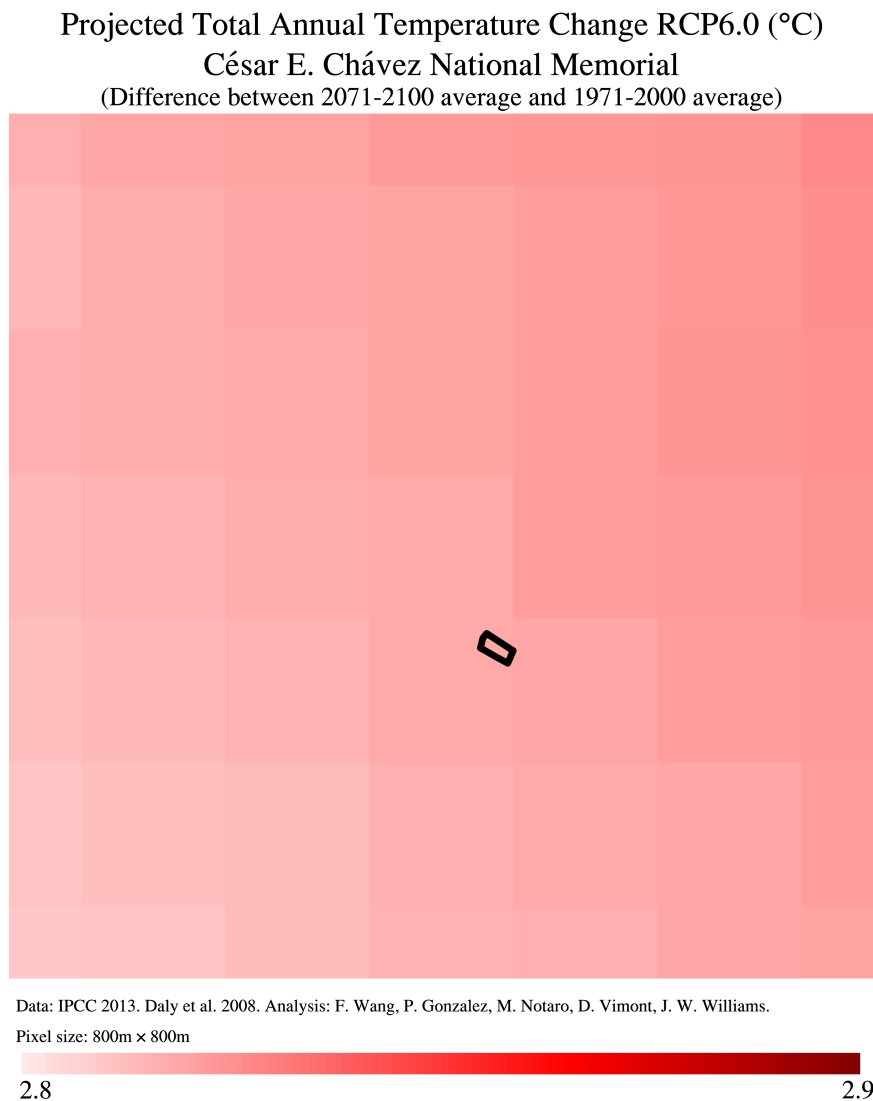
Data: IPCC 2013, Daly et al. 2008. Analysis: F. Wang, P. Gonzalez, M. Notaro, D. Vimont, J. W. Williams.

Pixel size: 800m x 800m



**Figure 5.**

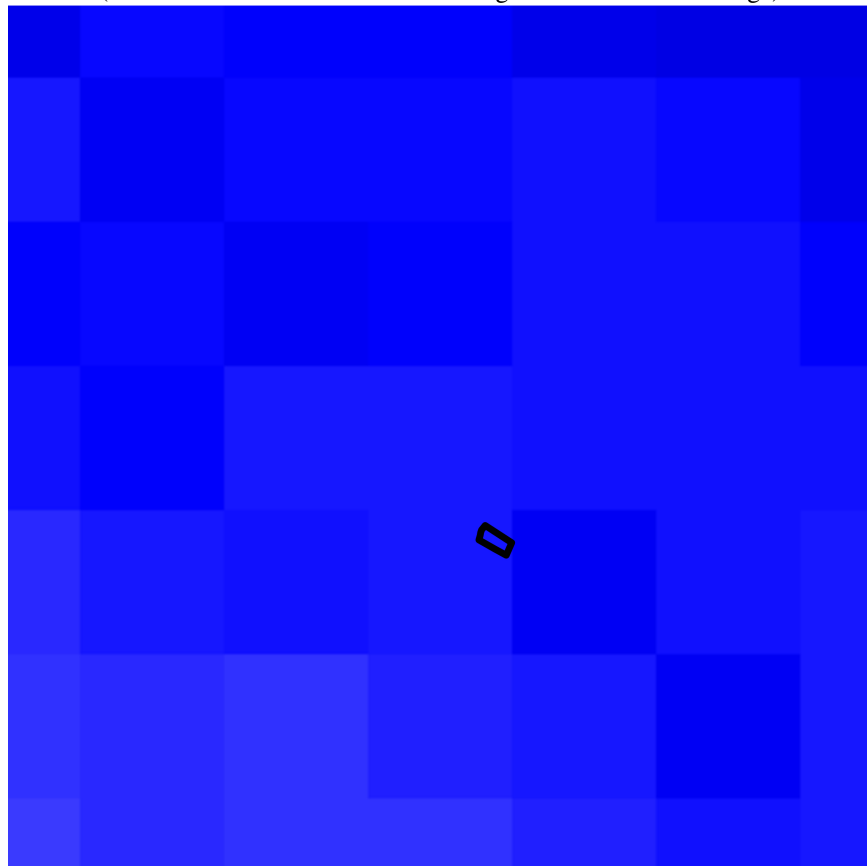
Projected change in average annual temperature (difference between 2071-2100 average and 1971-2000 average), for the high emissions scenario (IPCC RCP 6.0), César E. Chávez National Monument and surrounding landscape (data Daly et al. 2008, IPCC 2013; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).



**Figure 6.**

Projected change in average annual precipitation (difference between 2071-2100 average and 1971-2000 average), for the high emissions scenario (IPCC RCP 6.0), César E. Chávez National Monument and surrounding landscape (data Daly et al. 2008, IPCC 2013; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).

Projected Total Annual Precipitation Change RCP6.0 (%)  
César E. Chávez National Memorial  
(Difference between 2071-2100 average and 1971-2000 average)



Data: IPCC 2013. Daly et al. 2008. Analysis: F. Wang, P. Gonzalez, M. Notaro, D. Vimont, J. W. Williams.

Pixel size: 800m × 800m



**Figure 7.**

Projected changes in average annual temperature and precipitation for all emissions scenarios (small circle = individual general circulation models, large circle = average of all general circulation models, bars = standard deviation), César E. Chávez National Monument (data Daly et al. 2008, IPCC 2013; analysis Wang, F., P. Gonzalez, M. Notaro, D. Vimont, and J.W. Williams. in preparation. IPCC AR5 climate projections and exposure assessments for the US National Park System).

